

I CLAIM:

1. A leadframe for use in the assembly of semiconductor chips, comprising:

- 5 a first plurality of leadframe segments, each
 segment of said first plurality having a narrow
 end portion in a first horizontal plane and a
 wide end portion in a second horizontal plane;
 and
- 10 a second plurality of leadframe segments, each
 segment of said second plurality having a narrow
 central portion in said first horizontal plane,
 at least one wide central portion in said second
 horizontal plane, and narrow end portions in a
15 third horizontal plane, said third plane located
 between said first and second planes.
2. The leadframe according to Claim 1 wherein said wide
end portion has at least twice the width of said narrow
end portion.
- 20 3. The leadframe according to Claim 1 further comprising
bent segment portions to connect said segment portions
in said planes.
4. The leadframe according to Claim 1 further comprising
surfaces of said wide segment portions of said first
25 and second pluralities, which are covered by a layer of
noble metal.
5. The leadframe according to Claim 4 wherein said noble
metal is gold.
6. The leadframe according to Claim 1 further comprising
30 surfaces of said wide segment portions of said first
and second pluralities, which are covered by a layer of
solderable metal.

7. The leadframe according to Claim 6 wherein said solderable metal is a layer of nickel with an outermost layer of palladium.
8. The leadframe according to Claim 1 further comprising
5 surfaces of said narrow end portions of said first segment plurality and the narrow central portions of said second segment plurality, which are covered by a layer of solderable metal.
9. The leadframe according to Claim 1 further comprising
10 surfaces of said narrow end portions of said first segment plurality and the narrow central portions of said second segment plurality, which are covered by a layer of noble metal.
10. A semiconductor device comprising:
15 a leadframe having a first plurality of segments, each segment of said first plurality having a narrow end portion in a first horizontal plane and a wide end portion in a second horizontal plane;
20 said leadframe further having a second plurality of segments, each segment of said second plurality having a narrow central portion in said first horizontal plane, at least one wide central portion in said second horizontal plane, and
25 narrow end portions in a third horizontal plane, said third plane located between said first and second planes;
an integrated circuit chip having on its active surface a first plurality of contact pads
30 located in the peripheral chip portions, and a second plurality of contact pads centrally located, each of said pads having an

interconnection element attached;
said narrow end portions of said first plurality of
leadframe segments attached to said
interconnection elements on said first plurality
of chip contact pads, respectively; and
said narrow central portions of said second
plurality of leadframe segments attached to said
interconnection elements on said second
plurality of chip contact pads, respectively.

11. The device according to Claim 10 further comprising an encapsulation material covering said chip and said leadframe segments, leaving exposed said wide portions of said first and second segment pluralities located in said second horizontal plane.
12. The device according to Claim 10 wherein said first plurality of chip contact pads and said first plurality of leadframe segments serve as device signal inputs/outputs.
13. The device according to Claim 10 wherein said second plurality of chip contact pads and said second plurality of leadframe segments serve as device power and ground inputs/outputs.
14. The device according to Claim 10 wherein said interconnection element is a bump made of reflowable metal or alloy.
15. The device according to Claim 10 wherein said interconnection element is a bump made of non-reflowable metal or alloy.
16. The device according to Claim 10 wherein said wide segment portions have surfaces covered by a layer of noble metal.
17. The device according to Claim 10 wherein said wide

segment portions have surfaces covered by a layer of solderable metal.

18. The device according to Claim 11 wherein said encapsulation material is a molding compound.

5 19. The device according to Claim 11 wherein said encapsulation material further leaves exposed the chip surface opposite to said active surface.

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